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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,367	12/30/2003	John E. Maloney	TPI-0604	7782
23377 7590 04/19/2007 WOODCOCK WASHBURN LLP CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			EXAMINER PHUONG, DAI	
			ART UNIT 2617	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/19/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/748,367

Applicant(s)

MALONEY ET AL.

Examiner

Dai A. Phuong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/24/2007 has been entered.0

Response to Amendment

2. Applicant's arguments, filed 01/24/2007, with respect to claims have been considered but are moot in view of the new ground(s) of rejection. Claims 1-20 are currently pending.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 recites the limitation "a mobile station" in line 4. There is insufficient antecedent basis for this limitation in the claim. It should be corrected as "the mobile station".

Claim 1 recites the limitation "a land station" in lines 6 and 10. There is insufficient antecedent basis for this limitation in the claim. It should be corrected as "the land station".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Younis (Pub. No: 20050003833) in view of Lee et al. (Pub. No: 20060267841).

Regarding claim 1, Younis discloses a method for the determination of the location of a mobile station (MS) equipped with embedded GPS signal reception capability and equipped to operate within a wireless communications network, the method comprising:

(a) receiving GPS data at a land station, said GPS data being received from a MS to be located ([0008]. Specifically, Younis discloses a PDE is typically part of a wireless communications network that includes a plurality of base stations and at least one mobile device. The PDE continually tracks *the positions of the GPS satellites* through a network of stationary GPS receivers distributed across the coverage area of the wireless communications network. Before searching for the GPS signals, the mobile device transmits a request for GPS aiding information to the PDE through a local base station. Using the identity of the local base station, the PDE determines the approximate location of the mobile device and *provides the mobile device with the identities and positions of the GPS satellites that are likely to be in view*, and the expected Doppler shift of each identified GPS signal);

(b) at a land station equipped with location-measurement facilities, receiving a communications-band signal from said MS to be located and using the location-measurement facilities to extract location-related characteristic data from the communications-band signal ([0029]. Specifically, Younis discloses the wireless device 14 simultaneously collects measurements from at least one GPS satellite and at least one base station and transmits the collected information to the PDE 24, which carries out accurate position calculations using GPS

satellite information previously collected by the PDE 24. Younis discloses in paragraph 34 that the wireless device 14 transmits the snippet and the timestamp across a wireless communications link to the PDE 24 as part of a request for GPS aiding information. In addition, Younis discloses in paragraph 37 that the PDE 24 searches the signal memory 52 for the reference signal snippet received from the wireless device 14. If a match is found in Step 86, the PDE 24 compares the received timestamp against the reception time of the stored signal, and computes a time offset .quadrature.t between the two clocks, W_CLOCK 56 and P_CLOCK 54, in Step 88. In Step 90, the PDE 24 uses the time offset .quadrature.t to convert the timing data in the aiding information from the time domain of the PDE 24 and P_CLOCK 54 to the time domain used by the wireless device 14 and W_CLOCK 56); and

(c) at a land station equipped for location-determination calculations, performing location-determination calculations using the GPS data and the extracted location-related characteristic data ([0008] and 0037]. It is obvious that the system includes the necessary software, hardware, firmware or a combination thereof to accomplish the stated task or functionality).

However, Younis does not disclose performing location-determination calculations using the GPS data and the extracted location-related characteristic data to derive an estimated location for the MS.

In the same field of endeavor, Lee et al. discloses performing location-determination calculations using the extracted location-related characteristic data to derive an estimated location for the MS ([0028]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the wireless position determination system of Younis by specifically including performing location-determination calculations using the extracted location-related characteristic data to derive an estimated location for the MS, as taught by Lee et al., the motivation being in order to provide a position estimate for a terminal even if an insufficient number of signals from satellites and base stations are available. When an insufficient number of high-quality measurements is available, the techniques may be used to augment these measurements in order to derive a high quality position estimate.

Regarding claim 2, the combination of Younis and Lee et al. disclose all the limitations in claim 1. Further, Lee et al. disclose a method further comprising providing assistance data to the MS to be located, said assistance data enhancing the ability of the MS to receive GPS signals and extract TOA or pseudorange measures, wherein said TOA or pseudorange measures are then communicated to the said land station equipped with location-measurement facilities ([0028]).

Regarding claim 3, the combination of Younis and Lee et al. disclose all the limitations in claim 1. Further, Younis discloses a method further comprising communicating the GPS data and the extracted location-related characteristic data to said land station equipped for location-determination calculations ([0008] and [0037]).

Regarding claim 4, the combination of Younis and Lee et al. disclose all the limitations in claim 1. Further, Lee et al. disclose a method wherein said location-related characteristic data extracted from the communications-band signal includes time of arrival (TOA) data ([0028]).

Regarding claim 5, the combination of Younis and Lee et al. disclose all the limitations in claim 1. Further, Lee et al. disclose a method wherein said location-related characteristic data extracted from the communications-band signal includes time difference of arrival (TDOA) data ([0028]).

Regarding claim 6, the combination of Younis and Lee et al. disclose all the limitations in claim 1. Further, Lee et al. disclose a method wherein said location-related characteristic data extracted from the communications-band signal includes angle of arrival (AOA) data ([0028]).

Regarding claim 7, the combination of Younis and Lee et al. disclose all the limitations in claim 1. Further, Lee et al. disclose a method wherein said location-related characteristic data extracted from the communications-band signal includes data concerning signal strength or propagation loss (PL) ([0028]).

Regarding claim 8, the combination of Younis and Lee et al. disclose all the limitations in claim 1. Further, Lee et al. disclose a method wherein said location-related characteristic data extracted from the communications-band signal includes timing advance (TA) data ([0028] to [0036]).

Regarding claim 9, the combination of Younis and Lee et al. disclose all the limitations in claim 1. Further, Younis discloses a method further comprising using collateral information in performing said location-determination calculations ([0008] and [0037]).

Regarding claim 10, the combination of Younis and Lee et al. disclose all the limitations in claim 1. Further, Lee et al. disclose a method wherein said method is employed to achieve

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applicable Federal Communications Commission (FCC) accuracy requirements for E-911 ([0005]).

Regarding claim 11, this claim is rejected for the same reason as set forth in claim 1.

Regarding claim 12, this claim is rejected for the same reason as set forth in claim 3.

Regarding claim 13, this claim is rejected for the same reason as set forth in claim 4.

Regarding claim 14, this claim is rejected for the same reason as set forth in claim 5.

Regarding claim 15, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 16, this claim is rejected for the same reason as set forth in claim 7.

Regarding claim 17, this claim is rejected for the same reason as set forth in claim 8.

Regarding claim 18, this claim is rejected for the same reason as set forth in claim 9.

Regarding claim 19, this claim is rejected for the same reason as set forth in claim 10.

Regarding claim 20, this claim is rejected for the same reason as set forth in claim 2.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen M Duc can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-7503.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dai Phuong

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DUC M. NGUYEN
SUPERVISORY PRIMARY EXAMINER
TECHNOLOGY CENTER 2600